AMATEUR RADIO

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NOVEMBER, 1937

for

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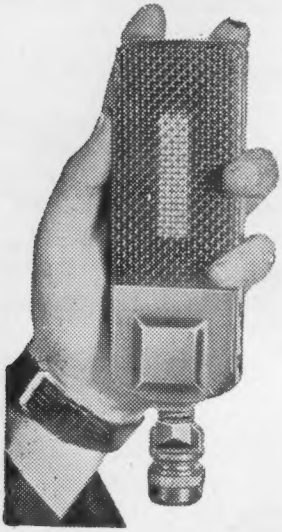

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EDITORIAL

With "Amateur Radio" well into its fifth year, an exposition of a few aspects of its publication is timely. Whilst the needs and requirements are identical with those of a commercially produced monthly, the collection of the matter necessary to fill each issue is very different in our case. We must depend entirely upon voluntary contributions for our copy, and whilst one might feel that a steady flow of articles would be assured from such a large and enthusiastic body of amateurs, the reverse is the case. "Amateur Radio" has one enemy—procrastination. In promises of articles—genuine promises from hams who have every intention of fulfilling them—it would be within the bounds of possibility to say that we could fill fifty issues. Unfortunately that old "thief of time," procrastination, whispers in the ears of all these well-meaning hams, "let the other fellow do it this month," and repeats the words next month and the following. All State Councils, in particular those of Victoria and New South Wales, have done a great deal to assure a steady flow of articles but, in the main, the position remains very little changed. There must be literally hundreds of interesting matters which are just crying out to be written up by some of you, there must be many details of your own transmitters and receivers, points of which would prove of value to your fellow hams if they could only see the light of day. The fact that you may not have a literary bent or may not be sure of some technical detail should deter you not at all. That is one of the reasons for the existence of the Magazine Committee.

The next matter is that of Notes. It can truthfully be said that the compilation and production of "Amateur Radio" would be a comparatively easy matter if it were not for that unknown factor—Notes. One month the quantity sent in is half that of the previous month, another month the majority arrive late and we don't know where we stand, and NEVER does an amount equivalent to the previous issue come to hand. The Magazine Committee has many ideas for improving the general layout and set-up which cannot be put into practice until this problem of Notes has been successfully laid. We realise the difficulty in which the Divisional correspondents find themselves, how they are dependent on other men for portions of their Division's quota. You can believe us, we realise only too well what a job yours is. It is a thankless but an essential job, for on your shoulders is the responsibility of presenting details of your Division's

Finally we come to the subject of general improvement. Constructive ideas are always most welcome and if those ideas are practicable you can be sure that they will be incorporated. Some excellent suggestions from VK3 country members this month have been responsible for the formation of two new sections of the Magazine, a DX page under the able guidance of VK3MR and a Questions Column. Both will add interest and variety to the pages, but both, naturally, depend upon one thing for their continuance—your support. Interstate DX men are wanted to forward regularly to 3MR information of DX conditions, etc., in their States, so that he can present an all-Australian survey that will prove of value and interest to hams throughout the country. The same remarks apply to the Questions Column. If you require information, the Magazine will help you all it can, but unless we hear details of your query nothing can be done. If you desire your question to be inserted anonymously we will see that it is arranged.

Boiled down to a single sentence, the foregoing means: "This Magazine is yours, if you want it improved you must help us improve it."

Efficient Doubling to 5 Metres

ENTRY FOR GADSEN TROPHY CONTEST

A. Pritchard, VK3CP

A super-hererodyne receiver, designed for our congested lower frequency bands, has a very high order of selectivity. If this receiver is also used on 5 metres the first thing noticed is the tremendous frequency band width of the high C. modulated oscillators and MO-PA's. This frequency band extends over several hundred Kilo-cycles and on the superheterodyne sounds like AC hash or in the case of the better wobbulators (!) an AC T2-3 carrier (heard with the beat note on the receiver) which jumps about during modulation. With our receivers of such a high order of efficiency at the ultra-high frequencies, surely it is time we changed from 1927 transmitters to 1937 Crystal controlled or Electron coupled oscillators to supply the fundamental frequency; then the efficiency of the following doublers is our greatest problem. Many systems of doubling have been tried here with varying results as to the output and tube heating, etc. In the lower frequency stages the output was very considerably increased by the ultra-audion system, i.e., the cathode bias resistance wound in the form of a choke—also a combination of ultra-audion and feed back via a small neutralizing condenser. Excellent output doubling from 20 to 10 metres was obtained with the push-push circuit using type '46 tubes (the elements connected as class B tubes) using cathode bias and 750V on the plates. All of these systems fell down badly when attempting high power doubling from 10 to 5 metres and the following circuit was designed and has given excellent efficiency and power output. With an RCA 801 type tube a resonance dip from around 200 mills to 40 is easily obtained. With all neutralized RF amplifiers, fair efficiency is obtained using the stage as a doubler because of feed back through the small neutralizing condenser. It is noticed that each time this condenser's capacity is altered, the grid tuning condenser must be adjusted to bring this grid tank back to resonance with the excitation frequency, as the neutralizing condenser-coil combination is in parallel. The idea is to remove this grid tuning condenser and its losses and tune this circuit to resonance by the neutralizing condenser alone, which

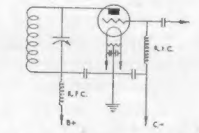


Fig. 1 Ordinary doubler circuit with no provisions for feedback

is also the feed back agent. In the majority of amplifiers or doublers feed back cannot be increased until the output frequency self-oscillation state is reached, but with my doubler this is possible. In circuit No. 3 it is noticed that the grid circuit is from the link coupled end of the grid coil where by-passed to earth, via the tapping to the grid of the valve, through the feed back condenser, and through half of the output tank, coil-condenser combination and by-passing to earth. The last portion has small effect at the excitation frequency (the circuit tunes perfectly) although being tuned to the output frequency, supplies the regeneration voltage admirably. It was also found

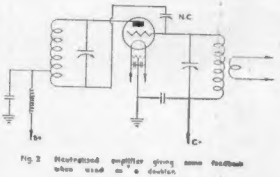
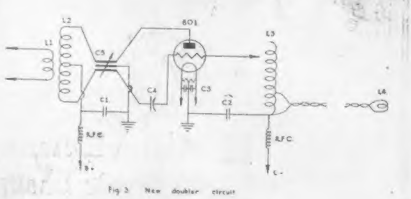


Fig. 2 Neutralized amplifier giving same feedback when used as a doubler

that more feed back could be used when the link coupling was connected directly to the coil (also earthing one side of the link), putting a slight damping effect across both tanks.

Good coupling is obtained with the link across 2 turns and a coil of 2 turns, 1½" diameter at the other end. In the case of this 5 metre doubler, the amount of feed back is adjusted by altering the tap on the grid coil, for instance, tuning the grid circuit to the excitation input with, say, 8 turns tapped in, will require the grid condenser in a certain position, if the resonance dip is not good enough, needing more feed back; putting the tap on, say, 6 turns requires the feed back condenser to be turned further in mesh to restore input resonance and automatically giving more feed back, caused by the extra capacity in use. It will be seen that if too much feed back is already being used, more than our example 8 turns will be necessary, thereby causing the feed back condenser to be turned more out of mesh to restore input F resonance again, automatically giving less feed-back voltage. Removing the ordinary gird tuning condenser not only reduces the losses but gives a bigger coil with increased impedance at the second harmonic feed back voltage, which is very necessary because this grid tank is in parallel having a shorting effect to the regeneration voltage. The split stator plate tuning condenser is most important, in fact the doubler will not work using a single section condenser in its place. My condenser is a re-modelled twin having originally .00035MF. each section and all double spaced. Bolts (with wing nuts) are soldered to small strips of brass, which in turn are soldered directly to the bars holding the fixed plates, giving low loss coil connections. It was found that in the case of the 801 type tube, the feed back adjusting tap is very critical, requiring a grid coil tapped each turn and not over ¾" in diameter—10 turns in all. The feed back condenser was originally .0001 MF. and is double spaced. It must have really good insulation; bakelite is unsatisfactory, as blisters and heat are developed, causing heavy losses. The plate coil has 6 turns of 12 SWG—1" inside diameter, with the turns spaced 5/16" between each and the tap in the centre. Coupling the output to an antenna or other load is accomplished by the two turn 2" diameter coil placed around the centre of the plate coil. The Collins coupler was found to load the set and appeared to put the output in the feeders, but actually the cause of the loading was the tuned circuit. The best system is to use the link coupling to another tuned tank and clip the feeders on to this. This outfit can be modulated by the grid bias system and under modulation the carrier stays T9X as received by 3BQ and 3YP on selective super-heterodyne receivers. The most satisfactory system of



L1—2 turns, 2" diam.
L2—6 turns, 1" diam., 5/16" between turns.
L3—10 turns, ¾" diam.
L4—2 turns, 1½" diam.
RFC—½" diam., 1" long, close wound 36 SWG.
C1—2 .01 MF mica in series.
C2—.001 MF mica.
C3—.001 each.
C4—Double spaced .0001 MF.
C5—Double spaced .00035 MF each section.

modulation is the plate or Heising method. With an 801 driver on 10 metres the doubler runs continuously with efficiency comparable to a straight neutralized amplifier with 750 volts on the plate, 300 volts bias (power pack) and loaded up to 100 mills. The above-mentioned amateurs can vouch for the efficiency of the system.

Remember the National Field Day December 4th, 5th

RADIOTRON 1608

- High efficiency
- Ceramic base
- 50 Watts Class B Audio (2 valves)
- 18 Watts Plate Modulated
- 27 Watts Class C Telegraphy
- 40 Watts maximum input
- Maximum ratings to 45 MC
- Low plate voltages

- 20 Watt (Dissipation) Triode
- Filament 2.5V 2.5A
- Amplification Factor 20
- Plate Voltage 425 max.
- Plate Current 70 ma. max
- Medium 4 Pin Ceremetic Base
- Typical output
  18 Watts (Plate Modulated)
  27 Watts (Telegraphy)

£1-15-0

RADIOTRONS

(Advertisement of Amalgamated Wireless Valve Co. Pty. Ltd.)

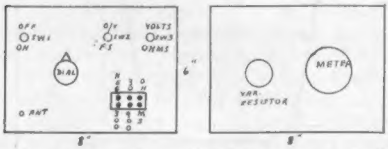
Field-Ohm Voltmeter

By J. Coulter

The Field-Ohm-Voltmeter presented here is the result of my effort to overcome one of the ham's greatest afflictions—a sad lack of milliameters.

The milliameter is mounted, together with a variable resistor, on the top of an aluminium case, 8" x 6" x 5". The controls on the front panel, left to right, are:—SW1, antenna connection directly below tuning condenser; SW2, SW3 and the ohm-voltmeter terminals beneath SW2 and SW3.

A leather handle is bolted to the top, just off centre to obtain balance, four rubber feet and a banana socket mounted on the bottom. The banana



socket is for attaching an earth spike.

The circuit is self-explanatory. One question may, however, be asked —why the separate resistors for each voltmeter range?

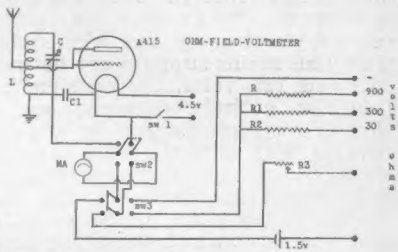
Resistor ratings were found to be unreliable, and in order that the error would not be additive the series connection was not used.

The circuit will also make operation quite clear, but one point might be mentioned in connection with the field measurements.

The antenna used must be the same length for each test, as these are only comparative readings.

This meter has been in use for over nine months, and although the cost was only £2/10/- I would not sell it for double that amount. So in gang. You'll find it useful.

L—For desired frequency.
C—For desired frequency.
C1—.01.



SW1—SPST Toggle Switch.
SW2—DPDT Toggle Switch.
SW3—DPDT Toggle Switch.
M.A.—0.1 ma Triplett.
Ohm scale.
0-30 volt scale.
0-300 volt scale.
R—900,000 ohms.
R1—300,000 ohms
R2—30,000 ohms.
R3—2000 ohm potentiometer.

Federal and Victorian QSL Bureau

(R. E. Jones, VK3RJ, QSL Manager.)

PAOLB, J. F. Diepstraten. Loopschansstraat 74, Breda, Holland, would be delighted to receive a QSL for the following contacts:—VK2UD, 2VQ, 3DP, 3KS, 4AP, 4BB and 2UU.

Don McKinley, VE3AU, has been on 14 mc daily each morning for VK contacts. August to October produced 76 different VK stations for him.

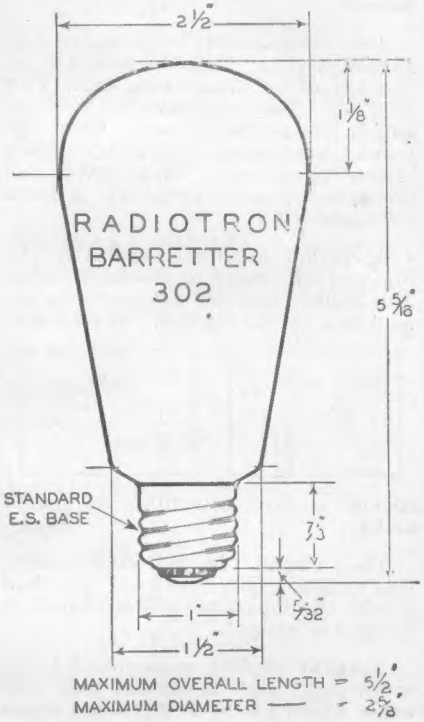
Dave Duff, VK2EO-3EO, is back in Sydney after a nice cruise around Australia. The movements of the Navy controls Dave's future plans.

Qras of the following VK3 stations are required:—B1, NV, TT, WU, WR, ZE.

Cards for the following Victorians are on hand:—AT, BS, BV, CA, CU, CV, DI, DJ, DK, DS, DU, EA, EF, EH, ES, FL, FM, FS, FT, GA, GM, HE, JA, JN, JR, LL, LQ, LV, NG, NS, NT, OX, PA, QB, QM, SE, SF, TB, TW, UF, UJ, UO, WL, XD, XE, XG, XU, XZ, YG, YM, ZC, ZY.

Radiotron's New Barretter Tube

The problem of A.C./D.C. receivers has from the first been one of difficulty. In America, where 110-volt supply is usual, and where practically all mains supplies are between 110 and 125 volts, the problem has been an entirely different one to that in Australia where we are confronted with a fairly wide range of voltages, and in many cases extremely pronounced fluctuations. The Australian voltages are all between 200 and 260 volts, which therefore eleminates the necessity for voltage doubling as is used in America. A minimum voltage of 200 permits this voltage to be applied, through a filter system generally incorporating the field coil of the loud-speaker as a choke, to the plate of the power pentode valve. This method has many attractive features, and is a very simple one to adopt, and is the one almost entirely used at the present time throughout Australia. The number of components in the filter circuit is a minimum, and the voltage applied to the power valve is sufficiently high to enable ample power output to be obtained. There has, however, always been a difficulty in the use of the 0.3 Amp. series of valves in that a suitable Barretter was not available. A Barretter is a resistance lamp, the resistance of which varies with the current flowing through it, so that when the current tends to increase the resistance increases much more rapidly, and the current is thereby maintained almost constant. In an A.C./D.C. receiver the heaters of all valves are connected in series, so that a voltage of approximately 70 Volts is required for a 5 Volt set using a typical combination of Radiotron valves. The difference between the 75 Volts required by the heaters of the valves and the voltage actually available from the mains must be dropped through some resistance device. In the past it has been usual to employ a fixed resistor with two or more tappings to suit various supply voltages, so that an approximately correct voltage was applied to the heaters of the valves. This method, while quite satisfactory in cases where the mains voltage are constant and where correct tapping is available to suit the mains voltage, has tended to give trouble when used with badly fluctuating mains



supply voltages. It is unnecessary to stress the fact that valves should always be operated with the correct voltage applied to their heaters of filaments, and this is even more true in the case of an A.C./D.C. receiver. One reason for its greater importance with A.C./D.C. receivers is that it is necessary to consider the valves in terms of the current flowing through the heaters rather than the voltage across one heater. Due to the fact that most of the resistance and therefore most of the voltage drop is not across the heaters but across the dropping resistor, the whole arrangement will tend to follow Ohm's law fairly closely. That is to say, the current and voltage drop

are proportional. The tolerance in current of a valve heater is plus or minus 6%, which means that the current of one 0.3 mp. valve should never increase above 0.318 or drop below 0.282 Amp. The reason why a tolerance of 10% is permissable when the heaters are connected in parallel is that under these conditions a 10% change of voltage only produces a 6% change of current due to the heater not obeying Ohm's law.

The problem in an A.C./D.C. receiver is, therefore, to keep the heater current of the valves within a tolerance of plus or minus 6% under any conditions of mains supply voltages. This can only be done successfully when an automatic device is used, and a Barretter is a very satisfactory as well as being a very simple solution. Although many Barretters have been used and are being used, none has been available on the Australian market for operation on the local range of mains supply voltages and at the same time suited to the standard 0.3 Amp. series of valves. Amalgamated Wireless Valve Co. Pty. Ltd. are pleased to announce that a Barretter Radiotron Type 302 is now available at a list price of 14/6. This Barretter has a range of voltage drop between 112 and 195 volts and the current flowing through it is 0.3 Amp. within the tolerances necessary for the operation of the valves. The use of the Radiotron 302 will undoubtedly assist in the design and satisfactory operation of A.C./D.C. receivers for Australian conditions. One of these Barretters has been used for several months past in a receiver which has been subjected to all the ill-treatment which could be imagined, and the set has stood up spendidly through it all. It can therefore be recommended as being both mechanically and electrically ideal for A.C./D.C. receivers.

The outline and dimensions of Radiotron 302 are shown in the drawing, and it will be seen that the overall dimensions are 5-5/16" x 2½" and that an Edison Screw base is employed. A standard Edison screw socket (as used for electric lamps) provides good electrical contact and mechanical support.

In conjunction with the Radiotron 302 Barretter it is recommended that Radiotron 43 power pentode be employed so as to permit a power output practically identical with that given by most A.C. receivers. There is no reason why an A.C./D.C. receiver cannot be as satisfactory as an A.C. receiver, either as regards power output or quality. As a rectifier, Radiotron 25Z5 is recommended with a resistance of 100 ohms in series with each plate, and with the two units connected in parallel. With this arrangement, a permissable D.C. current of up to 170mA may be drawn and this would be sufficient for any normal applications while giving an ample margin. A suggested valve combination is:—

Converter	6A7
I.F. Amplifier and Diode Detector with A.V.C.	6B7S
Audio	6C6
Power Output with series inverse feedback	43
Rectifier	25Z5
Barretter	302

A complete "G" series of valves has been added to the Radiotron range, so that manufacturers for the coming season may be able to use these Octal based glass valves in their receivers. In addition to the American "G" series there have been added the following "G" equivalents of the existing Australian types:—

Existing Class Types.	Equivalent "G" Types.
1C4	1M5G
1D4	1L5G
1K4	1K5G
1K6	1K7G
6B7S	6G8G

We wish to point out for your information that with the exception of the 1M5G these types are identical electrically in every respect with the existing glass types.

The 1M5G incorporates higher plate resistance, higher amplification factor and an improved A.V.C. characteristic, enabling receivers fitted with this type to be capable of handling large signal voltages without overloading.

There are also two additional types not included in the American Radiotron range, namely, the 6U7G and the 6B6G, being exact equivalents of the 6D6 and 75 respectively. These two types will be manufactured in Australia.

Stocks of the American types are already available, and supplies of the Australian-made "G" series are due for release in the early part of November.

The complete range to be manufactured in Australia is:—

1C7G	1K5G	5Y3G	6G8G
1D5G	1K7G	6A8G	6J7G
1F5G	1L5G	6B6G	6U7G
1J6G	1M5G	6F6G	6V6G

It is expected that the "G" series will be adopted throughout Australia as the standard for all new sets.

TRANSMISSION SCHEDULES.

November, 1937.

VK2ME, SYDNEY.

Sydney Time.	G.M.T.
Sundays: 4 p.m.-6 p.m.	0600-0800
,, 7.30 p.m.-11.30 p.m.	0930-1330
Mondays: Mdt.-2 a.m.	1400-1600

VK3ME, MELBOURNE.

Melbourne Time.	G.M.T.
Nightly Monday to Saturday (inclusive) 7 p.m.-10 p.m.	0900-1200

VK6ME, PERTH.

Wavelength 31.28 metres (9590 Kc/s.).

Perth Time.	G.M.T.
Nightly Monday to Saturday (inclusive) 7 p.m.-9 p.m.	1100-1300

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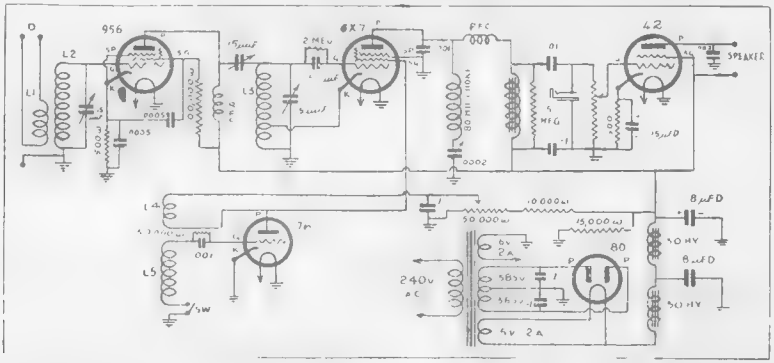
112, 56, 28 Mc Receiver

by VK2NO

The receiver here described won first prize in the ultra-high-frequency receiver section at the 1937 Amateur Radio Exhibition in Sydney. It represents a distinct step forward in modern super-regenerators, and the design is recommended as a standard for this class of receiver.

The search for R.F. amplifiers for use at five metres and below has been a long one, and although fair results can be obtained under some conditions with ordinary valves, there is no question about the superiority of the R.F. pentode "acorn." The 954 (pentode) and 955 (triode) have been available for some time, and recently the 956 joined the family. The difference between the 956 and 954 is that of a 58 to a 57 or 6D6 to a 6C6. It is more correctly an R.F. amplifier than the 954. It was decided therefore to incorporate this valve in a receiver with the object of securing effective amplification over a wide frequency range. Although a 954 could be used as detector, the 6K7 was used in this position with the object of reducing cost. The 6K7 proved a remarkably efficient ultra-short-wave electron-coupled detector.



"Self-squegger" detectors are at the best a makeshift, and so a separate interrupter valve was used. As this is arranged to switch on or off at will, the receiver is either a very efficient super-regenerator or a "straight" receiver as required. The interrupter is a 76.

The usual 42 pentode output and rectifier-filter arrangement can be used as in the diagram, but if a 41 is used in place of the 42 an excellent power supply for this receiver is comprised of a Philips 3003 "B" eliminator and a six-volt two-amp. filament transformer. With the exception of coil data all necessary values are indicated in the diagram.

The original receiver was made up in rack and panel form, with the receiver in the top rack and permag. speaker and power supplies in the bottom. It looks like a commercial job, and works even better than it looks. Plug-in coils are used for the three bands, and the mountings are made up of WT/22 insulation (loaded ebonite) with G.R. type sockets and plugs.

The R.F. stage is separately tuned. It could be ganged, but there are pitfalls in the way of so doing. As the R.F. stage tunes fairly broadly, the extra dial is no handicap. Capacity coupling is used between R.F. and detector stages, and this method was found to be the best after trying all couplings. The 956 is mounted through an interstate partition and carefully by-passed, direct at the socket. Heater and all "live" leads are braided and earthed throughout

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Wireless Questions

1. What is the function of an I.F. amplifier?

(The point that is not clear in my mind in regard to beat reception of an undamped wireless wave is the function of the first detector.)

Assume, for example, a signal is being picked up on 7,000 kc., and the beating oscillator 7,500 kc., the resulting beat note formed is thus 500 kc.

Now, I understand that the function of the first detector is one of rectification of the "mixed" frequencies. The output of a rectifier is one of unidirectional current, pulsating at the beat frequency. When this beat is applied to the grid of the first intermediate amplifier tube, would it be correct to assume that there can be no negative excursion of the plate current of that tube? If the input signal only varies from zero to maximum positive (being rectified, DC), how can the I.F. tube function as a straight amplifier and produce a wave form of 500 kilocycles, which will later be impressed on the grid of the second detector? I am at present under the impression that the signal on the grid of the second detector will be purely an amplification of the pulsating output of the first detector.

Answer to Problem

The more commonly used term "mixer" is a more appropriate one for the first detector in a superheterodyne receiver than the older term, although a process akin to rectification actually does take place in that tube in the impression of the beat frequency on to the primary winding of the first intermediate transformer.

In considering the operation of the first detector, three different freqencies can be regarded as being developed between the plate and cathode of that tube as a result of the application to the grid or the space charge of the incoming signal frequency, and the mixing frequency. One of these output frequencies is the signal frequency, the second is the mixing frequency, and the third is the difference between the two, or the beat frequency or intermediate frequency.

The primary circuit of the intermediate frequency transformer is tuned to the third of these. As a parallel tuned circuit, its impedance to the beat frequency is very high. Consequently, the beat frequency develops a relatively high alternating voltage across the winding. The impedance of that transformer primary to the signal and mixing frequencies is low. Hence they do not develop an appreciable voltage across the transformer primary, and are, in fact, by-passed to earth through the condenser tuning the primary.

The current flowing through the plate circuit of the first valve, therefore, is a pulsating direct current. But a pulsating direct current can be analysed into its direct and alternating components, and if the valve is operated as a class A amplifier, and is not overdriven, the alternating component will be of perfectly good wave form. The transformer, of course, can deal only with the alternating component, although the direct component is also flowing through its primary winding. Hence the output of the secondary winding will be an alternating current only.

The first intermediate amplifier tube is operated as a class A amplifier, and, if the receiver is correctly adjusted, it will not be overloaded. Hence there will appear in the plate circuit an alternating component identical in wave form with that of the e.m.f. applied to the grid of the tube. There can be no negative excursion of the plate current as you suggest. If the valve is incorrectly operated, or overloaded, it is possible for the current in the plate circuit to drop to zero on strong negative excursions of grid pressure, and to remain there for an appreciable angle of the cycle. If this happens, it is clear that the wave form of the alter-

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Amateur Radio

DX Notes

by VK3MR

I have been asked by the mag committee to write each month a few words about this DX racket. Included in my notes I hope to be able to drop a hint or two that may interest you dx hounds, and also to keep those interested in contests. well informed with the latest scores in the various tests held from month to month. It is up to you chaps that take an active part in these tests to drop me a line as soon as the test is over so that it will be in the mag as soon as possible, and so that we will not have to wait 9 months for the scores to be made public. Also you chaps that are content to pile up the list of countries worked, drop me a line with the latest dope, who you work and all about it. Thanks a lot in anticipation and have in my hands by the 12th of each month for publication in the following months mag. Well, the first section of the VK/ZL dx test is over. Conditions were very poor both week ends in VK, but seemed a bit better in ZL. The ZL's certainly rolled up in numbers and what notes! Oh ye ZL hams how can you! The Hf end of the 14mc band is 14,400 kc/s. ZL mag please copy! It is funny how the band widens during a contest, can't see why the IARU need go to Cairo for wider bands when they automatically widen! Aint right chaps Poor old GMR.....ZL's were not the only offenders by the way! There is one thing I can not understand and that is why the notes of certain stations get rough during contest periods, apart from causing terrible local interference it is to their detriment because the owner of a consistantly good note is respected, whereas those rotten rac ripply notes, well you can draw your own conclusions.

Another very important thing about having a consistantly good note or even a consistent one, whether good or otherwise, is that you get known throughout the world by your note and fist, and that is one big advantage. We in VK are known by the characteristics of our signal the same as we can pick out the W's, G's and the D's. So it looks as if you will have to have a good note because if it is consistantly bad you will tread on the vigee comms corns!

Some new stations heard in the test were, VQ8AS ex VQ8AH from Chagos Is. chirpy dc hanging about the LF side of the W fone band—easy to raise. VR4OC Solid sig T9, about 14,100. kc. not sure where he comes from, but not so far away. FI8AC, T9 about R6/7 at the HF end of the W fone band. French Indo China he is looking for a VK on fone too. Who managed to raise HS1BJ? where does he tune from! He has a solid sig both of fone and cw about 14,070 kc.

Our friend OA4J was very active on 14,280 kc and can always be worked by using the HF xtal, also LU9BV, both easy. The VS7 chaps are a puzzle to me, don't know where they

(Continued on Page 28)

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(Continued from page 12)

nating pressure presented by the plate of that Valve to the primary of the succeeding transformer will depart from that applied to the grid of the valve in that the negative peaks will be "clipped"—that is, their relative amplitude will be curtailed and they will be flat-bottomed. It does not follow, however, that the output from the transformer will repeat this distortion of wave form. The transformer is designed to have as high as possible an order of merit. This property can be considered virtually as a factor of electric inertia. This inertia, or fly-wheel property of the transformer, causes the alternating current flowing in the tuned circuit to complete each cycle as a substantially normal wave, even though the exciting voltage applied by the valve plate does not follow exactly the same wave form. This effect is commonly used in transmitting applications.

In the so-called class C radio frequency amplifier employed in radio transmission, the grid of the amplifier tube is biassed to a value at least twice the cut-off value for the tube at the operating plate pressure. It therefore follows that when an alternating potential is applied to the grid, current can flow in the plate circuit only on the tops of the positive peaks of the grid potential, because only on the tops of these peaks does the grid pressure reach a value of less than cut-off value. In other words, current flows through the valve for considerably less than 180 degress of each cycle applied to the grid. The plate circuit includes a condenser and coil tuned to the same frequency as the grid frequency, and the flywheel effect in this circuit completes each cycle, and a substantially accurate replica of the exciting wave form actually exists in this tuned circuit, although a valve operated in this way produces harmonics of the fundamental frequency rather prolifically. In commercial applications this disadvantage is overcome by the employment of a push-pull amplifier, in which even harmonics are cancelled out and an excellent wave form is reproduced.

Correspondence

AUSTRALIAN AIR LEAGUE

The Editors
Amateur Radio
Dear Sirs,

I would like to bring before the notice of amateurs and would-be amateurs the fact that the Australian Air League provides certain advantages which may prove of interest.

During recent weeks a series of scholarships leading to actual flying training for the pilot's "A" licence has been introduced for members. Many radio enthusiasts may also be airminded with regard to aviation as well as to "ham" radio, and may therefore desire to participate in League activities with a view to contesting such a scholarship.

Arrangements for regular "skeds" among "ham" members of the League are being made and are in the hands of Mr. R. Corthorn (VK 2VG).

The League has arranged for a series of slow Morse transmissions weekly by Mr. D. Reed (VK 2DR) on Friday evenings at 7.30 p.m. on the 80 metre band and all persons interested in learning the code are invited to utilise this service.

Readers who may be interested in the activities of the League are invited to write to me, and further information will be supplied.

Yours faithfully,
R. C. BLACK,
(VK 2YA).

(Continued from page 11)

the receiver, with the exception of grid leads.

In the plate of the detector is a special interrupter filter, consisting of an 80mh. choke and series .0002 pre-set condenser. This combination must be determined by trial. It must tune to the interruption frequency, and in so doing keeps this from getting to the grid of the audio stage. The iron-core choke used for coupling can be the secondary of a Philips audio transformer or any high-impedance choke. L4 and L5 are the I.F. coils, and can be adapted from an old 175kc. intermediate superhet transformer.

28 and 56 M.C. Notes

(A. Pritchard, VK3CP.)

Ten meters is still giving us good DX, although the peak condition is passing. At present the Europeans are showing up towards midnight and fading out a little after 1.15 a.m. We have been surprised to hear many W stations at good strength around 11.30 p.m. These Americans were first heard on Sunday, 26th September, when conditions were exceptionally good, a 599x report being received here at 3 CP from OK2OP at 11.15 p.m. At the half-hour W4EFS was heard qso GM6Xi giving him 599. At the same time W9 GBY was r6 calling CQ. D4XQF was r5 qso OH3NP. VK3YP had a fine list of DX on the 3rd October, contacting GM5KF, VS1AA, VU2AN, VU2AU, G5Li, PAoKZ, PAoUN, PAoMQ, OK2oP, SM6WL; later the same night, app. 11.30 p.m., Ingram heard W1DBR, W8CNC, W9WJD, with far greater strength on the European beam than the U.S. beam, showing that these W signals take a different path at this late hour. The following Sunday, at 3BQ, Max had a fine bag, receiving very good reports from the following:— G8MU, VU2CQ, VU2AU, OK2RM, SM6WL, SM5YH, OK1AA, U2NE, F8BS, ZU6P. These lists will give an idea of the chaps who are consistently on 10 meters. G2OA, ON4HC, CM2OP, CM2FA, VE3TY, J2CE, XE1CM (rac), KA1MM, VE5Bi, VS6AH, ZE1JU are also heard quite often. During this last contest the VK's, although rather weak here in VK3, as can be expected, due to skip, have been keeping VK on the map. VK2SD, 2ZW, 2AZ, 2RA, 2UD, 2ADE, 5HG, 5FM, 4BB, 4WH, 6SA, 6AA, 7AB, also VK3iW and 3TU have been doing fine work with the DX, the latter's line up having four stages—'59 tri-tet, 80 xtal, 6A6 doub. to 10 mx, 6L6 buffer and PP 35T's final. The antenna is being designed for 10 mx, with the two quarter wave sections in series, i.e., the Johnson Q copper bars feeding the open wire section, feeding voltage to the antenna proper, this feeder acting as an ordinary Zepp system on other bands, SV1RX, in Greece, had his only contact with VK here at 3CP on the 21st September, at 10.45 p.m. He has been heard a few times since at 7 p.m., but no contacts. Also, on the 19th September, OA4J was contacted on r5 phone; he is usually on at app. 1 to 2 p.m. most Sundays, and will give many the South American phone WAC contact, VK2RA having a fine contact first. On Tuesday, 13th October, at 11.30 p.m. until 1.30 a.m., many Europeans were r7; G6FL's phone was r8 at 3YP; PAoAZ, who is using only an 860 doubler final with 25 watts input, being r7. G6DH was r8, and during a half-hour contact reported exceptional conditions on 56 mc,, and many commercial harmonics on 41 mc. On 30th September, W2JCY heard his automatic cq test, on 56 mc at good strength. G6DH heard LSE on 41 mc r6 at 1800 GMT on the 12th October. RiS was r7 at 0930 GMT on 41.5 mc, and at 1345 GMT PPX and RiS r4 on 13th September. Hs is looking for VK on 56 mc at 1000 GMT each week-end. VK3JO is improving his fb 56 mc outfit with the added stability of crystal control, and Herb is re-building at present. Since the W 10 mx phone stations have been moved up the band a little, the long-lost CW stations are returning, and during the contest W5QL, W9ARL, W6 NiK, 6GCX, 9GBY, 9TB, 6CXW, 6GRX, 6FZA, 9UBY, 9AEH, all put in r8 signals. W3CBT has excellent phone; his rig had PP RK28's final with 450 watts modulated by calls B '03A's, an H type beam and National HRO completing the outfit. From New Zealand ZL3DJ is one of the most outstanding; he has excellent antennae on both 10 and 5 meters, which probably accounts for the fb results. On 5 meters he has 10 half waves in phase, and on 10 meters a V beam with 260 feet in each leg. ZL3AS is also xtal controlled with PP 210's on 5 meters. We are looking forward to good 10 mx contacts on the coming National field day.

Divisional Notes

To ensure insertion all copy must be in the hands of the Editor not later than the 18th of the month preceding publication.

N.S.W. Division

W. G. Ryan, Secretary, VK2TI, Box 1734 JJ, G.P.O., Sydney.

Country Zone Officers.

Zone 1 (Far West).—J. Perooz, VK2PE, Hope Street, Bourke.

Zone 2 (North-West).—H. Hutton, VK2HV, Byron Street, Inverell.

Zone 3 (North Coast).—R. J. Berry, VK2NY, 54 Bacon Street, Grafton.

Zone 4 (Hunter River and Coalfields).—R. W. Best, VK2TY, 57 Hunter Street, Newcastle.

Zone 5 (South Coast and South-West).—R. Ross, VK2IG, 673 David Street, Albury.

Information is to hand that the 14th Annual Federal Convention to be held in Sydney will occupy the week prior to Easter, 1938, the Annual Dinner to be on Easter Saturday night. This should assure a large attendance of country as well as city members.

The Senior Section of the 1937 VK-ZL DX contest has concluded, and attracted a large entry from N.S.W. The outstanding performance was that of 2ADE who had 316 contacts in 46 countries, and whose score, therefore, should be in the vicinity of 100,000. Some other approximate scores are:—2HF, 40,000; 2TF, 34,000; 2RA, 31,000; 2JX, 23,000; 2TI, 21,000; 2QE, 21,000. It is expected that some of the country members will have good scores. Conditions generally were rather poor.

As a means of advertising the 1938 Sesquicentenary Celebrations and the DX contest in October of next year, "stickers" will soon be available for attaching to QSL cards or envelopes. It is intended that trophies be awarded in both Senior and Junior Sections to the leading stations in VK-ZL and abroad, and also to the Division whose five best scores aggregate the most. The latter should provide an added incentive to those who otherwise would take only a casual interest in the contest.

STATION REPORTS

VK2EO back in Sydney and will be chasing the rare ones. Has worked 100 countries in 36 zones.

VK2HZ now has his 830B running in the new rig. During the contest worked Europeans on 28 mc.

VK2NO has new 56 mc receiver working very nicely—956 TRF, 954 det, 41 adio (and EBC3 optional interrupter). Has heard JNJ's harmonic.

2RA. Using 808 final and McMurdo Silver 9 tube super on all bands. Needs Europe for 28 mc WAC, having worked the others in one afternoon.

2HV. Uses 14 mc rotary beam with good results, although on low power.

2TA. Experimenting with antennas on 14 and 28 mc, and has been working some DX on 28 mc. 802's final and superhet receiver.

2UD. Also experimenting with antennas on 28 mc and has worked some nice DX there, including G5QY and PAOPN.

2WH. Moving to new location and hopes to be on again at the end of the year.

2ZJ. Using a single '10 final, and endeavouring to get receiver going

on 28 mc. Mainly interested in 14 mc at present.

THE WAVERLEY RADIO CLUB

Publicity Notes

Under the supervision of our President, Mr. Wells, work is progressing very favourably on our new transmitter, which will use a pair of type 807 tubes in the final stage. It looks as though our faithful TC04/10, which has served the Club for the last ten years, will be pensioned off at last.

A very interesting lecture was delivered by Mr. T. Brownlee (VK2XB) entitled "Therapy Apparatus." Many hams present at the lecture almost broke down and wept after discovering that the usual Therapy Machine consists of a pair of 806's in push-pull with about 500 watts input—it seems almost like sacrilege! We could put 500 watts to a better use than curing somebody's bunion.

A field day has been arranged to take place amongst Club members shortly, and considerable discussion has taken place regarding the most suitable operating frequency. The boys seem divided into two camps—one favours five metres and the other fancies 80 metres, so it was eventually agreed that both these bands should be used, and the results should prove very interesting. Providing the lads with the 5 metre receivers can hear the harmonies from the 80 metre rigs and vice versa with the 5 metre overtones, all should go well!

2AFG now uses a 6L6 E.C. oscillator driving a 45 P.A. and will soon be using an AL3 as a modulator for fone. Has migrated to 80 MX to dodge the terrific QRM on 40.

2AHJ has had some very fine results using .375 watts input (believe it or not) to a single 30 TNT, but is now shattering the ether with a 6L6 E.C. oscillator with 24.98 watts input. Good luck, George!

2AHB worked a ZU on 10 metres recently—not a bad start for a new ham. Keep up the good work, Arthur, but please throw away that bug, your ordinary key sounds about 500% better.

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2AFZ has been heard quite often at week-ends. Is contemplating building up a superhet receiver now that 2YF lives so near, in fact can hear 2YF in his diode fone monitor—some economy, Eric!

2EG still bagging large quantities of DX. Someone once said, "Doesn't that guy ever sleep? Every time I turn on the receiver I hear 'CQ DX DE VK2EG.'"

2ABS also dodging QRM on 80 metres, but gets QRN instead—we wonder which is the worst.

ZONE NOTES.

Zone 5, VK2IG.

Firstly, thanks to VK2AEO for his share of the notes this time. At least one ham doing his job. Good work, o.m. Ain't there any more who know anything? Come in, chaps.

2QE doing fairly in contest, but conditions against him. Has 5 mx receiver, but no sigs!

2OJ blew condenser in modulator and nearly ruined one of his trannies, and the bad language nearly ruined the rest of the outfit!

2EU wants any literature on doublers! Wants to double to 20 mx, but his 46 doesn't.

2VK.—Husbands of the dusky ones in New Hebrides deported him. Now back here and with T.N.T. Is working DX without antenna! Ask the locals!

2IG.—Don't clean your shacks, fellers. IG did, and shied his new xtal out. It's gone, but never went!

2AFD.—GG power plant to drive generator, so look out for QRM.

2AEO—GG nice DX on 40 mx. Has K7 and U8 thr. Fb work. Is on about 8 p.m. every night. Details of rig elsewhere.

2FQ now busy swotting, so qrt.

2AFF doing his bit on forty.

2JA building a super super with plenty of that white R.F. stopper about it.

2YW still putting out their usual good fone, with both Jess and Doug at the mike.

2AEI and 2AEA are two new ones, helping the qrm on forty, but only qrp at present.

2AEA talking of higher power later. Just keep talking, please, o.m., please! !

2AEI, 2AEO, and 2FQ are P.M.G. telegraphists, so don't try to rattle 'em with QRQ.

STATION REPORT.

VK2AEO, O. Polmear, Thorne Street, Wagga, is active on forty meters only at present, and uses a 59 E.C. osc. driving a buffer 46 linked to the final 210. The aerial is a half-wave Zepp for the xmitter es a doublet for the recvr. The recvr. is a seven-tube super. Countries worked lately include K7, U8, J8, VRI, KAI, XU8 and V.E. It is noticeable at this location that there are blackout periods on 40 mx, during which time no sigs at all come thru. This has been commented on by others in Wagga, too.

AUSTRALIA-ENGLAND ON 56 MC.

VK2NO RECEIVES CONFIRMATION

Brief reference was made in the September issue to a report received by D. B. Knock, VK2NO, which indicated that a station signing VK2N(?) had been heard on 56 mc phone by Mr. C. Mellanby, of Pwllheli, North Wales, on November 22nd, 1936.

The station log shows that at the time stated 2NO was working with VK2HL, using a Reinartz rotary beam aimed north-west, the transmitter using a pair of 35T's in the final with an input of 100 watts. In view of this, the detailed report received recently from Mr. Mellanby gives full confirmation of the reception. Mr. Mellanby's log reads as follows:—

22/11/36. Time approx. 2020. VK2N(?) on 56 mc 'phone in QSO with VK (?) (?) L. Fragments of speech—reference to 100 watts . . . pair 35 T's . . . rotary beam antenna . . . Signals lost in noise level. QSA 2/3. R strength various 2/3 and

3/4. Extremely high noise level and static.

Mr. Mellanby says that he heard the signals on several occasions prior to 22/11/36, but it was not until he heard Mr. Knock's voice on 14 mc. phone that he felt certain that it was VK2NO whom he had heard, this accounting for the delay in reporting.

It is thus established beyond doubt that 56 mc signals have been heard in England, and this constitutes a world's record for long distance transmission of UHF signals.

The transmitter at VK2NO uses a pair of 35 T's in push-pull driven by a pair of 801's, with 100 watts input, and various aerials are tried from time to time. At present a W8JK type beam arranged vertically is being tested and gives quite good directivity. The receiver is a TRF using acorn tubes, and can be used as a super-regen. if desired. With this receiver J.N.J.'s harmonic has been heard and harmonics from 14 mc stations 15 miles away have been heard at R8.

The receiver used by Mr. Mellenby has an R.F. pentode regenerative detector, triode first audio (choke coupled) and pentode output.

Our congratulations go to both the parties to this outstanding U.H.F. performance.

Victorian Division

KEY SECTION NOTES.

(By VK3HK.)

Another well-attended meeting of this section was held at the W.I.A. rooms on the 5th of October, at which a very enjoyable lecture was presented by 3SG on his recent trip into Central Australia. The other main attraction of the two and a half hours of the meeting was details of the W.I.A. dinner, which by the time you read this will have been held at Hotel Federal, i.e., 30th October.

A Few Doings from the Shacks.

3SG.—Now back from VK8 es on the job (EX-8DA hi!)

3SI.—Going to U.S.A. es Europe next December for five months.

3WH.—Just built an 8-toob super.

3SQ.—Working xtal rig after three months S.E.

3XV.—Still T.P.T.G. wid 801 (DX a K7).

3ZY.—Bill spends most of his week-ends climbing his stick to tie up his juice-squirter after every storm.

3KQ.—Doing big DX on 40, so why worry abt 20, hi!

3GB.—Bill is active on 200 mx fone es also 40 mx (cw only).

31W.—Now trying to get thru the auto qrm on ten mx.

3RD.—Fighting a super-gainer of the "Chief Little Wolf" variety, and it's winning, hi!

3TU/3DF.—Hrd operating on 28 mc, using call 3TU, but says has truble in hearing dx.

3EX.—3HK finds a new ham only two doors up road. Eric is, we believe, the youngest ham in Victoria. Anyhow, he has started off well by wkg W's with a 59 tri-tet C.O. es 40 mx xtal on 14 mc, fb eh (I mean the dx!).

3ZF.—Also finds his new qra only 100 yds off another nice Zepp in Barkly St., Elwood, but he hasn't broke the news yet.

3XL.—Re-built rig, using Jones exciter 6L6 g's link coupled to 210 link coupled to ½ wave Zepp, xtal freq 3564 kc.

3BQ.—Still trying to get some more sticks up.

3UK.—Had a torrid time during the recent gales; a top guy broke, followed by the cross arm on one of the masts. It was safely pulled down tho es re-erected the following week-end.

3YP.—Intends using a W8JK flat top beam for Europe on 28 mc in place of the present two half-waves in phase. Still using H type array for U.S.A. es South Africa.

3YK.—At present without a power supply es off the air, but occasionally operates the key at 3HK.

3HK.—Mainly active on 28 mc, es getting plenty a dx. Chaps, why not come down and join us; the whole world can be wkd when condx are "all set."

Well, gang, this seems like the end of our rag-chew this time; don't forget, think up some more "meat" for these notes before our next meeting, so 73 cul.

SHORT WAVE GROUP NOTES.

(By O. E. Davies.)

The members of the Group are showing an increasing interest in developmental and investigational experiments.

At the meeting on 22nd September the members present spent a very pleasant and profitable evening with the "G.R." Wheatstone Capacity Bridge. Much informative and educational data was gleaned from the evening's experiments.

At the meeting on 13th October, the Victorian Division held the Quarterly General Meeting. The Group were responsible for the procuring of a lecturer for the evening. Our Chairman, Mr. H. Stevens, is to be complimented on obtaining the services of Mr. W. Gronow for the occasion. Mr. Gronow gave a very interesting and instructive address on "Noise Measurements." 'Tis to be hoped that we will hear more of it. (The lecture, not the noise!—Ed.)

Mr. Burdekin doubts the specified value of some variable capacitors he has. So he checks up on the Bridge. His fears were vindicated, too.

Mr. Stevens still active on 5 mx. And still chasing pirates, too.

Mr. Anderson listening hard; doubt if he hears much though.

Mr. Budden also a keen listener. He's given up mo' bikes now; rather rough, eh, George?

Mr. Meallin is off to a new QRA. They tell me the rent was due. That so, Ken?

Mr. Smith still swotting A.O.P.C.

Messrs. Chard and Leonard going to have a go at the next one, so I hear. My, the place will be full of Ops soon.

Meeting nights for November fall on the 10th and 24th. Don't forget to look us up if you are in town. Interesting and educational lecturettes are held each meeting night.

U.H.F. SECTION NOTES.

(By 3JO.)

The 56 mc Field Day will definitely be held on 5th December. This is only one of the items discussed at the last meeting of this section, and is perhaps the most interesting at present. Indications are that this day, which is the second day of the National Field Day, will provide opportunities for contacts over districts and distances never before attempted. Stations from many country districts of Victoria have indicated their intention of co-operating, and it is expected that at least three other States will have stations on the job.

With so many stations covering such a large area it is expected that 56 mc records will be broken, and the possibility of an interstate contact or two is not unlikely. No details of transmitting and listening periods have as yet been arranged, but these will be passed on to those interested in due course.

All stations taking part are requested to keep a log of stations heard and contacted, and to send a copy of these to the secretary of this section.

The 56 mc transmitter for 3WI was discussed, and after demonstrations of two types of 56 mc oscillators by members it was decided to carry out further tests to ensure the most satisfactory circuit being obtained. The frequency meter also came in for some criticism, and some further tests are being conducted in this direction.

As anticipated the general activity on the band has improved, and during the month 3VH, 3QJ and 3FH were contacted.

3QJ has been among the missing lately, but came to light with 3FH the other day.

3FH, a newcomer to ham radio, is located at St. Kilda, and has to be content with keyed modulation at present.

3VH has been very busy, but has Jones' stabilised oscillator and feedback troubles now.

3LG gave us a surprise when he came on recently, after collecting some dope on the P.M.G.'s 56 mc activities. It seems they have managed contacts over 60 miles with high power, and will be trying to cross Bass Strait shortly. We hope they are favoured with better weather conditions than those which affected our efforts in this direction.

The November meeting is on the 16th, and as it is the last meeting prior to the field day it should be attended by all interested.

COUNTRY SECTION

(It is with the greatest pleasure that we head the notes of the newly-formed country section, the idea is a sound one and we wish it every success.—Ed.)

The response to the circular sent to all country members was most gratifying, an expression of opinion being obtained from practically every member. Whilst no definite plans have yet been made, as replies to the circular are still coming in, the broad details along which the new section will run are as follows:—

The State will be divided into three or four districts, each one having its own President and Secretary. There will be one convention at some central point in each district once a year. The inaugural meeting to make definite plans for the Section will probably be held at Ballarat

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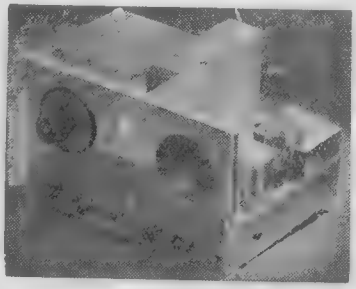

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early in November, but all members will be circularised with the final details. An endeavour will be made to have the business of the meeting broadcast, so that those members unable to attend will be able to follow the discussion. A regular weekly broadcast of WIA doings will be started shortly afterwards on both 3.5 mc. and 7 mc.

Queensland Division

(Via VK4AW-VK3ZC)

The October meeting was well attended and details were arranged for another inter-zone contest at an early date, similar to the last which was eagerly received by the country men. The lecture on Sound Projection had to be postponed till November meeting owing to Mr. J. Bateman's absence from town. About 20 hams were present at the hamfest arranged at Toowoomba on 16th and 17th October, and several ham shacks were visited, the local BC station inspected and generally a very pleasant time was had by all, including the Brisbane gang who journeyed 90 miles odd by car, running into very heavy rain most of the way. We understand many 5 metre schemes were discussed in addition to the usual DX and ragchew.

During September, the 56 mc gang once more journeyed to their pet 5 metre locations and repeated their performance of contacting over the 110 mile stretch just to prove it was no fluke. This time conditions appeared more favourable as signals generally were stronger and more consistent all round. Almost continuous communication could have been held over the 110 mile circuit from 9 a.m. to 2 p.m. Contact between 4HR, Springbrook and 4UZ Toowoomba, 90 add miles, was particularly good during the afternoon. What probably constitutes the first 56 mc interstate QSO was carried out from 4HR, Springbrook, to 2GS, Murwillumbah, although only a distance of 15 miles exists between the two locations. 4GU and 4FB at One Tree Hill contacted 4UZ Toowoomba early in the day, but signals faded after a five-minute contact. Extraordinary how signals behave. At this particular stage of fade-out, 4UZ's signal was R9 at 4HR. Tests carried out between 4WI, 4HR and 4AW definitely proved the superiority of vertical radiators at their respective distances.

The DX contest is keeping the boys busy at the moment. 4BB and 4WH seem to be landing some contacts on 28 mc.

4RY just returned from Sydney and Canberra, from which city hails 2GU, of 10 metre fame, who was at that time in Brisbane meeting a few of the local gang.

4FB.—Well bitten by the 5 metre bug. Contacts 4GU on the other side of town and putting out good quality. 4GU has rebuilt again for the umpteenth time and also has a super-het working nicely.

4LX had a flying visit from his uncle, 2EM. Ted is enthusiastic over his two half waves in phase on 14 mc directed on W. Possibility of 4LX going to Adelaide near future. If so, one very good 5 metre location will go to waste. 4AW has his eye on it.

4NO changed his location in Gladstone and also rebuilt.

Talking of versatility, we hear that the 4WT latest activity is gardening and that the OW has severely reprimanded him for digging up several of her favourite plants. Had a visit again from LA4D operator on Norwegian tanker. Old Bill is going to build up a super-het.

4UX is reported up on 80 metres with the Cuckoo Club. Not sure if this is a wiscrack or not.

4RM is chasing 20 metre DX.

4RX on fone using push-pull fifties in the modulator.

4AW.—Busy with amplifiers and 5 metre rebroadcasts.

4JX shifted QRA and has landed bad QRM location. On CW again for tests.

4RC has a new 5 metre receiver and is anxious to try it out.

4UU likely to come back on the air after a spell taken up in motorcycling.

It is rumoured the U gang are to hold a private hamfest reunion shortly. Location: Casino, 2ADE ex 4US.

4RT on 56 mc working few of the gang, but finds he can't hear most of them. Same here, John.

It is with deep regret this month we record the passing of Vic Herschel, VK4UK, who passed on after a short illness.

Vic will be remembered in connection with his low power efforts for VK4 in the Fisk contest early stages.

Several of the portable section here are looking forward to the National Field Day and intend trying their skill at knocking up a good contest score.

South Australian Division

(By VK5KL, via VK3MR)

All interested in the work of W.I.A. will be pleased to know that Mr. Kilgarraff, VK5JT ex VKZ, has been duly elected president of the South Australian Division until the end of the financial year.

With the VK/ZL DX contest in full swing, 20 metres sounded like battle raging with the ZL's predominating with their raspberry notes. In VK5, Mr Bowman, VK5FM, will have a good score by working 24 countries and 150 contacts. VK5KO put up a nice total by working on ten metres only.

A committee, that includes 5WW and 5ZX, have arrangements in hand for the field day to be held on 15th November. Come on, chaps, get that DF and portable gear in order, remember the success of the last field day? Well, let this one be, also.

The student class has been completed, and so by next exam Mr. Bournes should be rewarded by VK5 being provided with some more new calls, Best of luck, chaps.

The number of country stations is on the increase, and it's remarkable the strength and consistancy some of these chaps are received in the city on Sunday afternoons. The best heard are:— 5RE (of Renmark), 5GF, 5LC, 5GR, 5WG and 5WJ (of Port Lincoln).

VK4 must be congratulated on their obtaining the Australasia 5-metre record in August. Activity on this band here is at a low ebb, although 5HD has a real super going and it is a beaut. So he says. On 40 metres, old man static is prevalent now that summer is drawing near. VK5MV's signals are characterised by the very heavy rumble of the trains as they pass the shack, which drowns out George's voice. This station is operated by pressing a button and a bank of relays does the rest. George is getting lazy now that he is married. VK5TX, the QRP king, is getting amongst the DX again and QSO'd a few W1's. Remarkable, considering the power is only about 4 watts.

The first W.A.S. (worked all States) certificate has been issued by Federal Headquarters to Mr. G. Ragless, VK5GR. Congrats., Gordon, an achievement to VK5. Now, chaps, before I close, don't forget the National Field Day.

VK5 COUNTRY NOTES

(By VK5PN)

VK5BF.—A very keen U.H.F. man, Frank is always ready to co-operate with anyone desirous of carrying out serious tests on the ultra-highs. Location: Murray Bridge.

5FB.—Another Frank. A great worker in the interests of country amateurs. Guess he is busy on the QSO contest logs now. Winner should be announced shortly.

5HR.—Bill was in the City recently on a flying visit. Has reappeared on 40 mx with QRP fone, which steps out extremely well.

5LC.—A very active station. QRP fone here also, Les has suggested a spot-frequency State-wide country hams Q.S.O. every Sunday morning.

Excellent idea, all that is required to ensure its success is co-operation. Let us know your ideas on the most suitable frequency, chaps.

5LG.—Some news from Iron Knob. Leith reports reception on 20 mx wonderful at his location, but would like to hear less from 4JU and 4JX. Transmitter at 5LG is 42 tritet asc. and E406 p.a. with 2 watts input to p.a. (what do you say to that, Les?—5LC). Receiver 4 tubes T.R.F. using 6D6, 6C6, 76 and 201A.

Leith would like to see a few more articles on battery-operated rigs in the Mag., also something on a really decent Q.R.P. power supply which can be built up at reasonable cost.

5NW.—Rebuilding, hence the long silence. Has tried and heartily recommends the break-in idea as suggested by Roth Jones in a recent issue of the Mag.

5RE.—Extremely busy lately in connection with the Renmark Jubilee celebrations, but even extra work cannot keep Hobby off the air, and he is to be heard on 40 mx every Sunday.

5RJ. — Where there's smoke, there's fire; where there's radio, there's Darce. His contribution is A1 quality fone.

5WG.—Dividing his spare time between QSO and coaching an aspirant for A.O.P.C. honours, Wally is also going to get busy on the ultra-highs.

5YL.—Betty recently heard with fone on 40 mx. Good quality, too.

Our newest country member is Mr. Colin Battrall, of Port Pirie. Will be taking the exam very soon. Best of luck, O.M.

Deep silence from the following:—5PB, 5AT, 5QR, 5MP, 5YM, 5GW and 5XR. What are you doing, chaps.

Tasmanian Division

(By 7KV, via 7DH and 3MR)

I regret that the notes for the October issue were received too late by the editor for publication. Please don't blame 3MR this time! These notes will cover our September and October meetings (condensed).

At the September meeting the attendance was considerably greater than previously, due to, no doubt, the publicity given to the lectures by Mr. G. Miles, VK7KQ. Among our members were several visitors who came to hear 7KQ tell us all about what is doing on the U.H.F.'s. His subject for the evening dealt with 5 metres. It is expected that this band will get more attention after we have the pleasure of seeing the gear used by 7KQ.

A committee, comprising A. Allen (7PA), T. Allen (7AL) and T. Conner (7CT), has been appointed, with power to add, to commence preliminary arrangements for the proposed radio and experimental engineering exhibition to be held in Hobart early in the new year. This is our first attempt with such a scheme and we expect the full support of every member.

The Council has decided to offer very attractive trophies to competitors exhibiting the best gear. The National Field Day, which will take place on December 4th and 5th, proves to give VK7 a chance to show what can be achieved with portable gear. Rules for the contest appear in the October issue of "Amateur Radio."

SCANDAL

VK7YL.—Heard now and again. But say, Joy, who is the tall boy with the mo-bike??? And where did you get that stamp for the magazines???

VK7JB.—Has been suffering with a sore throat. Is it through talking to the BCL's on Sundays???

VK7DW.—Bunny was too lazy to build a mitter, so friend 7DH (noble man) had to come to his rescue. Now he is working a few VK's.

VK7AB.—Going in for fone in a big way. 6L6G's in modulator. Moaning about no DX in test!

VK7HY.—Henry is very QRL with service work.

VK7BQ. — Still entertains the BCL's on 200 metres on Sundays. Heard occasionally on 40 metre fone.

VK7RK.—The antenna king. Our best customer for the wire manufacturers. Would make a good sailor by the way he handles the aerial ropes.

VK7LC.—A very busy man judging by the QSL cards that pass through the QSL bureau. Keep up the good work, Lloyd.

VK7AR.—Cannot find time for radio as busy chasing BCL radio pirates and power leaks.

VK7DH.—Works the traffic when 7KV is not on his usual weekly holiday and too QRL to prepare the notes and missed the mail. We wonder what 3MR has to say about this?

VK7NG.—Gone bush somewhere in the Scottsdial district.

VK7AL.—Very busy building mitters and receivers. Expects to be on the air soon.

VK7PA.—Still keeps 200 metres going to entertain the BCL's. Why don't you send a QSL card when the BCL asks for one, even though they don't send a stamp?

VK7HM. — Too busy building a country mansion. Reported to have donated three tubes from his receiver to a worthy cause.

VK7AH.—Our G.O.M. of radio looking well again, and also occupies the chair at the meetings.

VK7CT.—Has QYL-itis very severe. Who cleaned up the shack, Henry, and mislaid your transmitter? You shouldn't leave it lying about!

VK7CM.—Very quiet, probably studying for the intermediate exam or something.

VK7LZ.—Building up a junk box receiver. A super I'm told. Scrapped his mighty atom two-tuber.

VK7CL.—Has migrated to some north coast town.

VK7JH.—Dodging between Shannon and Waddanana. So the Shannon is a good place for DX, Jack!

VK7RZ.—At Devonport, seems to be very active. A lot of cards have been posted to him, so it is evident that 7RZ has been busy.

CK7LJ.—Lon, the last one on the list, but he was one of the first VK7's on the air, and now he entertains the BCL's on Sundays. Keeps a SKED with Snowy Harrison Friday nights.

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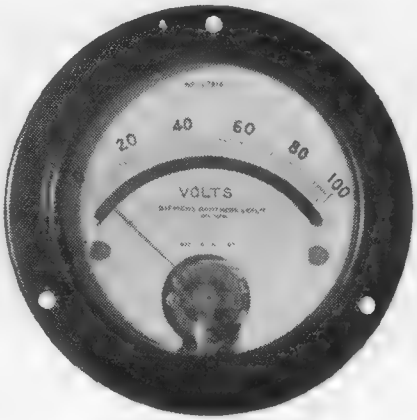

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R.A.A.F. Wireless Reserve Notes

Officer Commanding: Flying Officer R. H. Cunningham, 397 High Street, Glen Iris, S.E.6, Victoria (VK3ML).

District Commanders—

Second District, N.S.W.—A. G. Henry, Clareville Avenue, Sandringham (VK2ZK).

Third District, Victoria—Pilot Officer V. E. Marshall, 75 Argyle Road, Kew, E.4 (VK3UK).

Fourth District, Queensland—A. E. Walz, Sandgate Road, Nundah (VK4AW).

Fifth District, South Australia—F. M. Gray, 52 Ormond Grove, Toorak Gardens (VK5SU).

Sixth District, West Australia— 6ZI-VK6JE.—J. Elsbury, 24 Addis Street, Kalgoorlie.

Seventh District, Tasmania—R. Cannon, Goldie Street, Wynyard (VK7RC).

Federal Notes by the O/C.

With the establishment of new Squadrons in Queensland and West Australia, it is very likely that the control of the Reserve will be decentralised and placed in the hands of the local squadron. The matter is now being discussed and plans for an interesting and intensive training course are being drawn up. The same proposal will be brought into effect in N.S.W., and thus all Districts with the exception of South Australia and Tasmania will be under a local command. However, an Air Force district is not bound by State boundaries and may be made to encircle any area desired. Thus, these two Districts will more than likely be included in the Victorian Squadron scope of activities.

The idea of the decentralisation appeals very much, especially in the case of VMF and VMD where headquarters supervision is far away. It is expected that recruits for the citizen air force W/T section will be drawn from the Reserve thus leaving us with fewer members. Those who do not become members of the C.A.F. will form a reserve of operators who will be trained by those in the squadron. The great advantage being that the exercises and co-operation will be carried out by chaps who know the Reserve and its position through their past associations.

In order to get members' views on the proposal, a circular letter is to be sent out from the Air Board asking for opinions. This may have been done by the time these notes are in print.

3rd DISTRICT
(VK3UK-3ZI)

VMC has recommenced schedules again after the holiday period and is following a syllabus that will complete a thorough revision of the Procedure Manuals by the end of the year. We expect the new plan of attachment to 21 Squadron will take place early in January, thus our revision of the Manuals will be completed just prior to that event. The Squadron has already shown its desire to co-operate by offering five positions within the Squadron itself to members of VMC. Whilst we will be sorry to lose any members from the Reserve, a transfer to the Squadron ranks will tighten the bonds between the two.

3D3 will be the first member transferred, we imagine.

3B5 is having a particularly busy time at the present, and is finding it hard to spare the time each Sunday to be on Reserve schedules.

3C1 is back on regular schedules again.

3C4 will be down in VIM for the WIA Dinner.

3C5 is still having a bad time with his new transmitter, and has his 808 in Melbourne now for checkover. 3D4 will be up in Nathalia early next month and will be able to give him a hand to put things right.

3C6 has his receiver temporarily out of action.

3D4, as mentioned above, will be away early in November in Nathalia and Numurkah.

3Z1 has maintained his run of bad luck over his masts. Following the broken back guy and cross-arm last month, the bolt holding the pulley on the other mast rusted through last week and so another mast taking down and putting up again is imminent. All available spare time is being devoted to organising the WIA Dinner and testing and building gear for the National Field Day.

1A1 will be over in VIS next week. As his trip is a rush one, we don't anticipate he will have much time for any ham visits.

6TA DISTRICT

Affairs in this District are progressing as well as can be expected. 6A1 and 6A6 are now in possession of the long-awaited manuals and are preparing for intensive training. Unfortunately 6A6 is stationed out of town for the time being, but hopes to make his presence felt in the near future. 6A5 is still holding down his part of Reserve affairs at Geraldton and is very enthusiastic. The District headquarters is at a temporary disadvantage owing to absence of reserve channel coils for the FBXA receiver; consequently full co-operation is impossible until they arrive from U.S.A. The distance from the District Capital makes news gathering for these notes quite a formidable task. Members over here have expressed disappointment at the absence of District news from other than VMC. The notes fill in the niche in the Reserve scheme of things and are greatly missed. Surely there is some activity in those Districts that we Westerners would like to hear about. 6Z1 was the only member in this District to compete in the CW contest and had a perfectly punk time. The only really active band being ten metres where all States were heard, but not one station could be raised, although 3D1 was called several times.

(Continued from Page 13)

tune from. VS7RP, 7MB and 7RF very active in test, all T9, typical G fists, key as if the reputation of old England depended on them like some of the G's (ok Clary).

Several XZ's were on instead of defending their country! Our old pal VP5PZ on the job again about 14,260 kc, an example of picking a station by his note and fist! Worked here the long way round about 7.15 a.m., also heard at 10 p.m. on, especially when the W's are weak KA1AX and 1FM very active, both shift all over the band. XE1CM out at the HF end about T2 or so, being qrm'd by several zls and GMR. XE1AM about 14,370kc. tunes from HF end, easy money. Worked NY4AC who was only using 5 watts. R4/5, about 14,300kc. 11 p.m. Another rare one is ST2LR from Khartoum in the Sudan, T9 about 14,360kc. after mid-night most days during the week. Others heard but not worked were VS6, who called cq, worked a VK2 heard about the test and beat a hasty retreat, hi. CM, HK, CN8, HH, 5PA fone. VP2 calling 3EG for 30 mins! the long way round and out of band too (hi) UZ, K6, VS2.

Some scores, 5FM. 24 countries. 150 qsos, 7YL, 13.900 pts. Joy picked up a few new countries too, too bad about the qrm from GMR Joy! The writer was not in the test but only snooping and worked 33 countries to keep in form for the junior test. Having a wager with 7YL. Not much on 40 meters, about 5 a.m., ZS2X, CR7AU, ZE1JO and J3CD were worked while

(Continued on cover 3.)

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VK3FN, Nathalia, Vic.

WANTED Ham Superhet. Alternatively, who will build to own or my specifications Quotation and Details to "Busy" Box 4540 G.P.O. Melbourne.

(Continued from Page 28)

condx lasted. This band was hardly used. 28mc seemed full of Californian KW's calling 5KO, 3CP and 3YP. Altogether there was not much interest taken in the test but more is expected in the junior, which is more of a novelty, many yanks have been worked who have been trying out the qrp and are tickled pink with the results obtained. Will try and dig up something more interesting for next month. All band cw test proved to be a great success as predicted last month, 7AB seems to be leading with 1618 points. He had more contacts than any other station known. 133? Working same number of states per band as 3MR and others. This test is one of the best tests ever held, because no one can moan about not working all VK! owing to low power, etc. Its great fun. Who heard 4JU calling cq test on CW! After these 48,000 qso's Frank your fist has suffered somewhat! Wonder what scores 3EG, 3KX are, also 2HF, 2ADE and the other VK2 Gang who seemed to be going flat out.

W8BTI scored 5193. 102 contacts, reports lack of ZL4's. VK3CX reports South Americans coming in like locals. Xtal rigs are no good for raising dx I am told!

VK4BB, 41 countries,	51,000	pts.
4HJ	21,000	pts.
VK3KX	34,000	pts.
3MR	38,000	pts.

The Manager of Bright Star Radio wishes to draw attention to readers that owing to a printer's error the prices of 200 160 meter, and 80 meter crystals in one of the Bright Star Radio's advertisements in last month's "Amateur Radio" became reversed. These should have read, 200, 160 meter 15/-, 80 meter 10/-.

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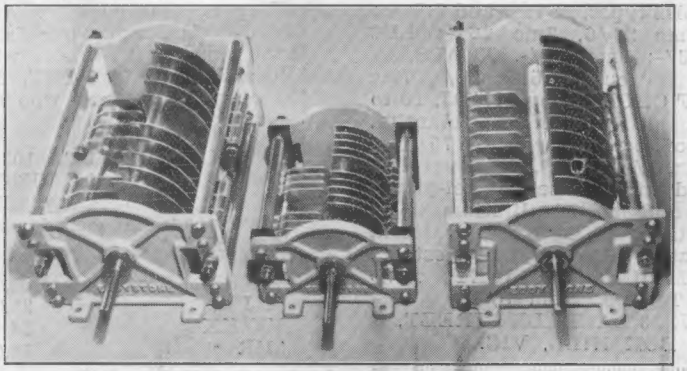

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